

# INDUCTION OF BETA CELL DIFFERENTIATION IN HUMAN CELLS

## ABSTRACT OF THE DISCLOSURE

The present invention provides methods for inducing insulin gene expression in cultured pancreas cells, the method comprising contacting a culture of endocrine pancreas cells expressing a PDX-1 gene and a NeuroD/BETA2 gene with a GLP-1 receptor agonist, wherein the cells have been cultured under conditions such that the cells are in contact with other cells in the culture, thereby inducing insulin gene expression in the cells. The invention also provides high throughput screening methods for modulators of  $\beta$ -cell function, stable cultures of cells made by the methods of the invention, and methods of treating a human subject using the methods of the invention.

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